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Barbecued meat gives clean chit to nano safety

Charred meat barbecued over open fire has graphene and other nano carbon particles, scientists have found, leading them to a significant conclusion -- that these materials are non-toxic to humans and could be absolutely safe¹. The finding could give a boost to research in nano materials whose safety has been the subject of debate.

Manav Saxena and Sabyasachi Sarkar from the Indian Institute of Engineering Science and Technology, Howrah, West Bengal claim that introduction of any new nano-material for the benefit of humans may not need to wait long. They say evidence already exists to show that these nano materials are safe. The scientists came to this conclusion after a detailed analysis of the charred parts of meat barbecued over open fire. Their analysis shows that burnt meat contains graphene (in the form of graphene oxide) along with nano carbon particles.



Barbecued meat has graphene and other carbon nanoparticles

Image Source / Alamy

"Consumption of food roasted on an open fire has been going on from the time the stone age man discovered fire more than 10000 years ago. The unintentional intake of such nano carbon stained cooked meat by man for thousands of years has not shown any ill effect," the duo say in their paper. If any mutation had occurred under the stress of such food intake in humans, "our evolution (must have) acquired full immunity against the use of such nano carbon materials today," it says.

The researchers say they were surprised to find graphene derivatives and carbon nano particles in 'plant charcoal' used in a branded formulation of gripe water approved for treating stomach ailments like indigestion, abdominal distension with cramping pains in infants.

The isolation of graphene and nano carbon particulates from both roasted meat -- consumed by humans for centuries -- and the plant charcoal, used in an approved medication for infants strongly refutes toxicity menace of such nano carbons to humans, they add.

References

1. Saxena, M. & Sarkar, S. Involuntary graphene intake with food and medicine. RSC Adv. (2014) doi: [10.1039/C4RA04022H](https://doi.org/10.1039/C4RA04022H)

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